

AMENDMENTS TO THE CLAIMS

Claims 1-76 (Canceled)

77. (Previously Presented) A system for use during coronary surgery on a beating heart, comprising:

- a suction head adapted to positively engage the beating heart;
- an arm which is flexible in an unlocked condition and rigid in a locked condition;
- a spring suspension connecting said suction head to said arm; and
- a surgery target immobilizing element adapted to contact a portion of the heart to immobilize the location of the heart on which the surgery is being performed.

78. (Previously Presented) The system of claim 77, wherein said surgery target immobilizing element includes a support arm and a target-defining element attached to a distal end of said support arm.

79. (Previously Presented) The system of claim 78, wherein said target-defining element is U-shaped.

80. (Previously Presented) The system of claim 77, wherein said support arm is adapted to be fixed to a relatively stationary object to immobilize said target-defining element.

81. (Previously Presented) The system of claim 78, wherein said support arm is adapted to be fixed to said arm, and when in said locked condition, said arm comprises a relatively stationary object.

82. (Previously Presented) The system of claim 77, wherein said suction head is adapted to engage the heart near an apical region thereof, and said arm is adapted to be fixed to a relatively stationary object.

83. (Previously Presented) The system of claim 82, wherein said spring suspension permits movement of the heart in at least one plane when said suction head is engaged with the heart, said arm is

fixed to the relatively stationary object, and said arm is in said locked condition.

84. (Previously Presented) The system of claim 83, wherein said spring suspension permits multiplanar movement of the heart when said suction head is engaged with the heart, said arm is fixed to the relatively stationary object, and said arm is in said locked condition.

85. (Previously Presented) The system of claim 77, wherein said suction head comprises a vacuum input adapted to fluidically connect with a source of vacuum.

86. (Previously Presented) The system of claim 77, wherein said suction head comprises a flexible rim adapted to engage the heart.

87. (Previously Presented) The system of claim 77, wherein said suction head comprises a flexible suction cup.

88. (Previously Presented) The system of claim 77, further comprising a sternal retractor, wherein said arm is adapted to be fixed to said sternal retractor, and wherein said suction head is free to move, relative to said arm via said spring suspension, even when said arm is in said locked condition.

89. (Previously Presented) The system of claim 88, wherein said surgery target immobilizing element is adapted to be fixed to said sternal retractor to immobilize said surgery target immobilizing element with respect to the portion of the heart contacted.

90. (Previously Presented) The system of claim 78, further comprising a sternal retractor, wherein said support arm is adapted to be fixed to said sternal retractor to immobilize said target-defining element with respect to the portion of the heart contacted.

91. (Previously Presented) The system of claim 77, wherein said surgery target immobilizing element comprises at least one suction cup fluidically connected to a source of suction, for attachment to and immobilization of the portion of the heart.

92. (Previously Presented) The system of claim 91, wherein said surgery target immobilizing

device includes a pair of sections each including a plurality of said suction cups.

93. (Previously Presented) The system of claim 78, wherein said target defining element comprises a pair of flexible sections adapted to contact the portion of the heart.

94. (Previously Presented) The system of claim 93, wherein said support arm comprises a pair of support arms connected with said pair of flexible sections, respectively.

95. (Previously Presented) The system of claim 93, wherein said target defining element further comprises a pair of rigid elements, and said support arm comprises a pair of support arms, said rigid elements interconnecting respective ones of said flexible sections with said support arms.

96. (Previously Presented) The system of claim 78, wherein said target defining element comprises a pair of suction members adapted to contact the portion of the heart.

97. (Previously Presented) The system of claim 96, wherein said support arm comprises a pair of support arms connected with said pair of suction members, respectively.

98. (Previously Presented) A system for use during coronary surgery on a beating heart, comprising:

a suction head adapted to engage a region of the heart;

an arm which is flexible in an unlocked condition and rigid in a locked condition;

a suspension mechanism connecting said suction head to said arm;

an attachment mechanism adapted to fix said arm to a relatively stationary object, wherein said suction head is free to move, relative to said arm via said suspension mechanism, even when said arm is in said locked condition; and

a surgery target immobilizing device adapted to contact a portion of the heart to immobilize the location of the heart during performance of the surgery.

99. (Previously Presented) The system of claim 98, further comprising a frame adapted to maintain an opening for access to the heart.

100. (Previously Presented) The system of claim 99, wherein said attachment mechanism is adapted to fix said arm to said frame.

101. (Previously Presented) The system of claim 99, wherein said surgery target immobilizing device is adapted to be fixed to said frame.

102. (Previously Presented) The system of claim 99, wherein said frame comprises a sternal retractor.

103. (Previously Presented) The system of claim 102, wherein said attachment mechanism is adapted to fix said arm to said sternal retractor.

104. (Previously Presented) The system of claim 102, wherein said surgery target immobilizing device is adapted to be fixed to said sternal retractor.

105. (Previously Presented) The system of claim 98, wherein said suspension mechanism is biased upon engaging the heart with said suction head and lifting the heart with said arm through said suction head.

106. (Previously Presented) The system of claim 98, wherein said surgery target immobilizing device includes a support arm and a target-defining element attached to a distal end of said support arm.

107. (Previously Presented) The system of claim 106, wherein said target-defining element is U-shaped.

108. (Previously Presented) The system of claim 106, wherein said target defining element comprises at least one suction cup fluidically connected to a source of suction, for attachment to and immobilization of the portion of the heart.

109. (Previously Presented) The system of claim 106, wherein said target defining element includes a pair of sections each including a plurality of said suction cups.

110. (Previously Presented) The system of claim 106, wherein said target defining element comprises a pair of flexible sections adapted to contact the portion of the heart.

111. (Previously Presented) The system of claim 110, wherein said support arm comprises a pair of support arms connected with said pair of flexible sections, respectively.

112. (Previously Presented) The system of claim 110, wherein said target defining element further comprises a pair of rigid elements, and said support arm comprises a pair of support arms, said rigid elements interconnecting respective ones of said flexible sections with said support arms.

113. (Previously Presented) The system of claim 106, wherein said target defining element comprises a pair of suction members adapted to contact the portion of the heart.

114. (Previously Presented) The system of claim 113, wherein said support arm comprises a pair of support arms connected with said pair of suction members, respectively.

115. (Currently Amended) A system for use during coronary surgery on a beating heart, comprising:

a first device configured to engage and reposition ~~for engaging and repositioning~~ the beating heart to a displaced position and maintain ~~maintaining~~ the heart in the displaced position while allowing cardiac output to be maintained substantially unabated and uninterrupted, said first device having an engaging portion adapted to engage the heart and a proximal portion configured to be fixed relative to a relatively stationary object, wherein said engaging portion remains movable when said proximal portion is fixed; and

a second device adapted to engage a portion of the heart to immobilize the portion, while a remainder of the heart continues to beat, to facilitate surgery in the location of the portion of the heart.

116. (Previously Presented) The system of claim 115, further comprising a frame adapted to maintain an opening for access to the heart.

117. (Currently Amended) The system of claim 116, wherein said proximal portion of said first device is adapted to be fixed to said frame, whereby said frame supports said device during said

repositioning and maintaining.

118. (Previously Presented) The system of claim 116, wherein said second device is adapted to be fixed to said frame, whereby said frame immobilizes said second device to stabilize the portion of the heart.

119. (Previously Presented) The system of claim 116, wherein said frame comprises a sternal retractor.

120. (Currently Amended) The system of claim 119, wherein said proximal portion of said first device is adapted to be fixed to said sternal retractor, whereby said sternal retractor supports said device during said repositioning and maintaining.

121. (Previously Presented) The system of claim 119, wherein said second device is adapted to be fixed to said sternal retractor, whereby said sternal retractor immobilizes said second device to stabilize the portion of the heart.

122. (Currently Amended) The system of claim 115, wherein said engaging portion of said first device comprises a suction head adapted to engage the region of the heart.

123. (Currently Amended) The system of claim 122, wherein said proximal portion of said first device ~~further~~ comprises an arm which is flexible in an unlocked condition and rigid in a locked condition; a suspension mechanism connecting said suction head to said arm; and an attachment mechanism adapted to fix said arm to the a relatively stationary object, wherein said suction head is free to move, relative to said arm via said suspension mechanism, even when said arm is in said locked condition.